BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

IFW

June 16, 2004

Anita Nador B.A. (Molec. Biophys./Biochem), LL.B.
416 957 1684 anador@bereskinparr.com

Your Reference: 10/782,871
Our Reference: 11157-74

Commissioner for Patents and Trademarks
Washington, D.C. 20231
U.S.A.

Dear Sir:

Re: FILING OF AN INFORMATION DISCLOSURE STATEMENT
United States Patent Application No. 10/782,871
(Continuation-In-Part of U.S. Application No. 09/645,594)
Entitled: Use of Charged Dextran as a Mucoactive Agent and Methods and Pharmaceutical Compositions Relating Thereto
Inventors: Malcolm King
Filing Date: February 23, 2004
Grp Art Unit: 1617
Examiner: Lauren Q. Wells

In accordance with 37 CFR 1.97 and 1.98, and in recognition of the duty of disclosure set forth in 37 CFR 1.56, Applicant hereby submits an Information Disclosure Statement on Form PTO-SB08A containing a listing of patents and other publications of which Applicant is aware. Applicant is also submitting the references listed on the Information Disclosure Statement.

All of the patents and publications submitted herewith are in the English language. Accordingly a concise explanation of the relevance of the documents is not required.

The Examiner is requested to indicate consideration of these documents by initialling the appropriate column.

Applicants reserve the right to contest the applicability of any of these documents as prior art against the subject application. If the Examiner has any questions concerning this Information Disclosure Statement, he/she is requested to contact the undersigned. Entry of the enclosed Information Disclosure Statement is believed to be in order and is respectfully requested.

This Information Disclosure Statement is being filed before the issuance of a first official action, and therefore no fees are required. However, please charge our deposit account No. 02-2095 if such a fee is required.

Respectfully submitted,

MALCOLM KING

Anita Nador
Registration No. 47, 366

Bereskin & Parr
Box 401, 40 King Street West
Toronto, Ontario, Canada
M5H 3Y2

Tel. (416) 364-7311

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 6

Complete if Known	
Application Number	10/782,871
Filing Date	February 23, 2004
First Named Inventor	Malcolm King
Group Art Unit	1617
Examiner Name	
Attorney Docket Number	11157-74

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No.[1]	Document Number: Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US- 5,514,665		Speert et al.	
	2	US- 5,980,865		Ahmed	
	3	US- 6,153,187		Yacoby-Zeevi	
	4	US- 5,968,822		Pecker et al.	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document: Country Code[3] - Number[4] - Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
✓	1	WO 91/15216 PCT	10-17-1991	Kennedy		
✓	2	WO 95/17898	07-06-1995	Novadex Pharm Ltd.		
✓	3	WO 93/08810 PCT	05-13-1993	Carrington Lab INC		
✓	4	EP 0177783	04-16-1986	Kanto Ishi Pharma et al.		

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 2 of 6

Complete if Known	
Application Number	10/782,871
Filing Date	February 23, 2004
First Named Inventor	Malcolm King
Group Art Unit	1617
Examiner Name	
Attorney Docket Number	11157-74

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	1	KING, M., AND B.K. RUBIN. 1996. Mucus physiology and pathophysiology: Therapeutic aspects. Chapter 13 of: Derenne, J.P., W.A. Whitelaw, and T. Similowski, eds. Acute Respiratory Failure in COPD (Lung Biology in Health and Disease Series) Marcel Dekker, New York, 391-411.	
	2	RUBIN, B.K., R.P. TOMKIEWICZ, AND M. KING. 1997. Mucoactive agents: Old and new. Chapter 7 of: Wilmott, R.W., ed. The Pediatric Lung. Birkhduser, Basel, 155-179.	
	3	SHEFFNER, A.L. 1963. The reduction in vitro in viscosity of mucoprotein solutions by a new mucolytic agent, N-acetylcysteine. Ann. N. Y. Acad. Sci. 106:298-310.	
	4	DASGUPTA, B., AND M. KING. 1996. Reduction in viscoelasticity of cystic fibrosis sputum in vitro with combined treatment by Nacystelyn and rhDNase. Pediatr. Pulmonol. 22:161-166.	
	5	APP, E.M., R. KIESELMANN, D. REINHARDT, H. LINDEMANN, B. DASGUPTA, M. KING, AND P. BRAND. 1998. Sputum rheology changes in cystic fibrosis lung disease following two different types of physiotherapy: Flutter vs. autogenic drainage. Chest 114:171-177.	
	6	FENG, W., H. GARRETT, D.P. SPEERT, AND M. KING. 1998. Improved clearability of cystic fibrosis sputum with dextran treatment in vitro. Am. J. Respir. Crit. Care Med. 157:710-714.	
	7	WILLS, P.J., R.L. HALL, W.M. CHAN, AND P.J. COLE. 1997. Sodium chloride increases the ciliary transportability of cystic fibrosis and bronchiectasis sputum on the mucus-depleted bovine trachea. J. Clin. Invest. 99:9-13.	
	8	KING, M., B. DASGUPTA, R.P. TOMKIEWICZ, AND N.E. BROWN. 1997. Rheology of cystic fibrosis sputum after in vitro treatment with hypertonic saline alone and in combination with rhDNase. Am. J. Respir. Crit. Care Med. 156:173-177.	
	9	SHAK, S., D.J. CAPON, R. HELLMISS, S.A. MARSTERS, AND C.L. BAKER. 1990. Recombinant human DNase I reduces the viscosity of cystic fibrosis sputum. Proc. Natl. Acad. Sci. U.S.A. 87:9188- 9192.	
	10	VASCONCELLOS, C.A., P.G. ALLEN, M. WOHL, J.M. DRAZEN, AND P.A. JANMEY. 1994. Reduction in sputum viscosity of cystic fibrosis sputum in vitro by gelsolin. Science 263:969-971.	
	11	DAVISKAS, E., S.D. ANDERSON, J.D. BRANNAN, H.K. CHAN, S. EBERL, AND G. BAUTOVICH. 1997. Inhalation of dry-powder mannitol increases mucociliary clearance. Eur. Respir. J. 10:2449-2454.	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] Unique citation designation number (optional). [2] Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 3 of 6

Complete if Known	
Application Number	10/782,871
Filing Date	February 23, 2004
First Named Inventor	Malcolm King
Group Art Unit	1617
Examiner Name	
Attorney Docket Number	11157-74

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	12	SHIBUYA, Y., P.J. WILLS, S. KITAMURA, AND P.J. COLE. 1997. The effects of lactose on mucociliary transportability and rheology of cystic fibrosis and bronchiectasis sputum. Eur. Respir. J. 10:321s.	
	13	FUCHS, H.J., D.S. BOROWITZ, D.H. CHRISTIANSEN, E.M. MORRIS, M.L. NASH, B.W. RAMSEY, B.J. ROSENSTEIN, A.L. SMITH, AND M.E. WOHL. 1994. Effect of aerosolized recombinant human DNase on exacerbations of respiratory symptoms and on pulmonary function in cystic fibrosis. N. Engl. J. Med. 33:637-648.	
	14	RANASINHA, C., B. ASSOUFI, S. SHAK, D. CHRISTIANSEN, H. FUCHS, D. EMPEY, D. GEDDES, AND M. HODSON. 1993. Efficacy and safety of short-term administration of aerosolized recombinant human DNase I in adults with stable stage cystic fibrosis. Lancet 342: 199-202.	
	15	KING, M., AND B.K. RUBIN. 1999. Mucus controlling agents: Past and present. In: Rau, J.L., ed. Aerosolized Drugs for the Respiratory Tract. Respir Care Clinics N Amer. in press.	
	16	FENG, W., S. NAKAMURA, E. SUDO, M.M. LEE, A. SHAO, AND M. KING. 1999. Effects of dextran on tracheal mucociliary velocity in dogs in vivo. Pulm. Pharmacol. Ther. 12:35-41.	
	17	LEE, M.M., AND M. KING. 1998. Effect of low molecular weight heparin on the elasticity of dog mucus. Clin. Invest Med. 21:S 102.	
	18	LEE M.M, H. GARRETT, E. SUDO, W.A. BOYD, AND M. KING. 1998. Mucociliary clearance increase due to low molecular weight heparin. Pediatr. Pulmonol. 386:S 17.	
	19	APP, E.M., J.G. ZAYAS, AND M. KING. 1993, Rheology of mucus and epithelial potential difference: Small airways vs. trachea. Eur. Respir, J. 6: 67-75.	
	20	KING, M., S. KELLY, AND M. COSIO. 1985. Alteration of airway reactivity by mucus. Respiration Physiol. 62:47-59.	
	21	KING, M. 1988. Magnetic microrheometer. In: Braga, P.C., and L. Allegra, eds. Methods in Bronchial Mucology. Raven Press, New York, 73-83.	
	22	KING, M. 1987. The role of mucus viscoelasticity in cough clearance. Biorheology 24: 589-597.	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] Unique citation designation number (optional). [2] Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 4 of 6

Complete if Known	
Application Number	10/782,871
Filing Date	February 23, 2004
First Named Inventor	Malcolm King
Group Art Unit	1617
Examiner Name	
Attorney Docket Number	11157-74

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	23	RUBIN, B.K., O. RAMIREZ, J.G. ZAYAS, B. FINEGAN, AND M. KING. 1990. Collection and analysis of respiratory mucus from individuals without lung disease. Am. Rev. Respir. Dis. 141:1040-1043.	
	24	DAVISKAS, E., S.D. ANDERSON, I. GONDA, S. EBERL, S. MEIKLE, J.P. SEALE, AND G. BAUTOVICH. 1996. Inhalation of hypertonic saline aerosol enhances mucociliary clearance in asthmatic and healthy subjects. Eur. Respir. J. 9:725-732.	
	25	ROBINSON, M., A. HEMMING, J.A. REGNIS, D.L. BAILEY, M. KING, W. FENG, G.J. BAUTOVICH, AND P.T.P. BYE. 1998. Improved mucociliary clearance following nebulisation with hypertonic saline in adults with cystic fibrosis. In: Baum, G., ed. Cilia, Mucus and Mucociliary Interactions. Marcel Dekker, New York, 265-280.	
	26	TOMKIEWICZ, R.P., W.A. BOYD, W. FENG, E.M. APP, B.K. RUBIN, AND M. KING. 1997. Tracheal clearance and mucus rheology in healthy dogs after aerosolization of 3% and 7% hypertonic saline. Am. J. Respir. Crit. Care Med. 155:A780.	
	27	NAKAMURA S, SUDO E, W. FENG, M.M. LEE, W.A. BOYD, AND M. KING. 1998. Effects of hypertonic saline aerosolization on tracheal mucus clearance and mucus rheology in healthy dogs. Eur. Respir. J. 12(S28): 180s.	
	28	WINTERS, S.L., AND D.B. YEATES. 1997. Role of hydration, sodium, and chloride in regulation of canine mucociliary transport system. J. Appl. Physiol. 83:1360-1369.	
	29	TOMKIEWICZ, R.P., E.M.APP, G.T. DE SANCTIS, M. COFFINER, P. MAES, B.K. RUBIN, AND M. KING. 1995. A comparison of a new mucolytic N-acetylcysteine L-lysinate with N-acetylcysteine: Airway epithelial function and mucus changes in dog. Pulm. Pharmacol. 8:259265.	
	30	SUDO, E., M.M. LEE, W.A. BOYD, AND M. KING. 1998. Effect of methacholine and uridine-5' triphosphate on tracheal mucus rheology in mice. Pediatr. Pulmonol. S 17:229.	
	31	TAI, S., H. KAI, T. KIDO, Y. ISOHAMA, K. TAKAHAMA, AND T. MIYATA. 1997. Effect of human neutrophil elastase on tracheal mucociliary transport in anesthetized quails. Jpn. J. Pharmacol. 75:439-442.	
	32	KING, M., A. GHAHARY, R. FRANKLIN, M. HIRJI, D. MALCHENKO, W.A. BOYD, H. GARRETT, AND M.M. LEE. 1999. Studies on aerosolized low mol. wt. heparin as a mucokinetic agent in dogs. Am. J. Respir. Crit. Care Med. 159:A474.	
	33	BJORCK, S., E. JENNISCHE, A. DAHLSTROM, AND H. AHLMAN. 1997. Influence of topical rectal application of drugs on dextran sulfate-induced colitis in rats. Dig. Dis. Sci. 42:824-832.	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] Unique citation designation number (optional). [2] Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 5 of 6

Complete if Known	
Application Number	10/782,871
Filing Date	February 23, 2004
First Named Inventor	Malcolm King
Group Art Unit	1617
Examiner Name	
Attorney Docket Number	11157-74

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	34	LORENTSEN, K.J., C.W. HENDRIX, J.M. COLLINS, D.M. KORNHAUSER, B.G. PETTY, R.W. KLECKER, C. FLEXNER, R.H. ECKEL, AND P.S. LIETMAN. 1989. Dextran sulfate is poorly absorbed after oral administration. Ann. Int. Med. 111: 561-566.	
	35	BELLER, F.K., ZIMMERMAN, R.E., AND H. NIENHAUS. 1986 Biochemical identification of the mucus of pseudomyxoma peritonei as the basis for mucolytic treatment. Am. J. Obset. Gynecol. 155:970-3.	
	36	RAO N. V. et al;, "Sulfated Polysaccharides Prevent Human Leukocyte Elastase-Induced Acute Lung Injury and Emphysema in Hamsters", American Review of Respiratory Disease, vol. 142, no. 2, 1990, pp. 407-412.	
	37	MOTOJIMA S et al: "Effects of Anionic Polyelectrolyte Substance on Damages to Respiratory Epithelium Induced by Eosinophil Peroxidase", Dokkyo Journal of Medical Sciences, MIBU, JP, vol. 21, no. 2, 1994, pp. 123-134	
	38	FATH M. A. et al.: "Interaction of Secretory Leukocyte Protease Inhibitor with Heparin Inhibits Protease Involved in Asthma", Journal of Biological Chemistry, American Society of Biological Chemists, Baltimore, MD, US, vol. 273, no. 22, May 29, 1998, pp. 13563-13569.	
	39	COYLE A. J. et al: "Role of Cationic Proteins in the Airway Hyperresponsiveness due to Airway Inflammation", American Journal of Respiratory and Critical Care Medicine, American Lung Association, New York, NY, US, vol. 150, no. 5, part 2, Nov. 1994, pp. S63-71.	
	40	BARGHOUTHI SAMEER et al.: "Inhibition by Dextran of Pseudomonas Aeruginosa Adherence to Epithelial Cells", American Journal of Respiratory and Critical Care Medicine", vol. 154, no. 6, part. 1, 1996, pp. 1788-1793.	
	41	COYLE ANTHONY J. et al.: "Cationic Proteins Induce Airway Hyperresponsiveness Dependent on Charge Interactions", American Review of Respiratory Disease, vol. 147, no. 4, 1993, pp. 896-900.	
	42	BARROWCLIFFE, MICHAEL P. et al.: "Pulmonary Clearance of Radiotracers After Positive End-Expiratory Pressure or Acute Lung Injury", J. Appl. Physiol. (1989), 66(1), 288-94.	
	43	BARROWCLIFFE M. P. et al.: "Clearance of Charged and Uncharged Dextrans from Normal and Injured Lungs", Journal of Aplied Physiology, vol. 68, no. 1, 1990. pp. 341-347.	
	44	ATHAMNA ABED et al. "Adherence of Mycoplasma Pneumoniae to Human Alveolar Macrophages", Fems Immunology and Medical Microbiology, vol. 15, no. 2-3, 1996, pp. 135-141	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] Unique citation designation number (optional). [2] Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 6 of 6

Complete if Known	
Application Number	10/782,871
Filing Date	February 23, 2004
First Named Inventor	Malcolm King
Group Art Unit	1617
Examiner Name	
Attorney Docket Number	11157-74

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	45	PAUL M. QUINTON, Physiological basis of cystic fibrosis: a historical perspective. Physiol Rev. 1999 Jan;79(1 Suppl):S3-S22.	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] Unique citation designation number (optional). [2] Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.